Space Weather Forecast

Issued on Wednesday, 26 January 2022 at 13:30 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

---

Space Weather Forecast Headline: Slight chance G1/Minor Geomagnetic Storm, mainly 26 and 28 January. Slight chance throughout of Moderate-class flares.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: Solar activity has been low with several common class flares, mainly from two regions in the northeast quadrant, one of which has only recently rotated onto the visible disc. Three remaining regions, two in the southern solar hemisphere and one in the northwest, appear to be stable and relatively inactive. A CME (coronal mass ejection) which lifted from near AR2935 on 25 January has been assessed as likely passing over the Earth, but with a chance of a glancing arrival around 29/0000UTC +/- 9 hours.

Solar Wind / Geomagnetic Activity: The solar wind reached a peak of around 500km/s due to a coronal hole fast wind, but has since started to decline. Total magnetic field strength started moderate but soon declined to weak levels. The north-south component started by varying moderately, but has also weakened. Geomagnetic activity was generally Quiet to Unsettled (Kp 1-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background with no solar radiation storms were observed.

Four-Day Space Weather Forecast Summary
Solar Activity: Solar activity is expected to remain low, with five active regions on the visible disc, and potentially two further regions likely to rotate on. There is a slight chance of Moderate flares.

Solar Wind / Geomagnetic Activity: A CME which left the Sun on 22 January, may have arrived at Earth, but data is inconclusive, with a possibility of this arriving later on 26 January. A further CME glancing blow is possible on 29 January, although this is considered more likely to miss the Earth. The Earth is under the influence of a fast wind, which is expected to decline later on 26 and into 27 January. A further elevated fast wind is then expected to develop either late on 27 or on 28 January. Quiet to Unsettled intervals are expected at first on 26 January, with a chance of Active intervals or slight chance of G1/Minor Storms due to the possible CME arrival. Activity is then expected to be Quiet to Unsettled on 27 and 28 January, with a chance of Active intervals due to the onset of a fast wind, with a very slight chance of G1/Minor Storm intervals. There is a further low risk of G1/Minor Storms on 29 January due to the possible CME, but otherwise Quiet to Unsettled intervals are expected.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to remain at background with no solar radiation storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2022. All Rights Reserved.

Met Office

Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	20	5	10	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	15	15	15	15
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2022. All Rights Reserved.